<u>In the Claims:</u>

Cancel claims 9-11, 15, 17-19, 22-23, 25, 26, 28, 29, 37, 38, and 46, without prejudice.

The claims after amendment are as follows:

1. (Previously Presented) A substrate to which final user printing can be later applied to yield a final printed object, characterized in that the substrate has been processed prior to final user printing to yield a steganographic digital watermark pattern thereon that does not impair subsequent use of the substrate, yet encodes multi-bit binary data, the presence of said multi-bit binary data not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the multi-bit binary data can be recovered.

2. (Original) The substrate of claim 1 in which the substrate has been processed with ink to form the steganographic digital watermark pattern thereon.

3. (Original) The substrate of claim 2 in which the ink is clear ink.

4. (Original) The substrate of claim 2 in which the ink is speckled across at least a part of the substrate.

5. (Previously Presented) A substrate to which final user printing can be later applied to yield a final printed object, characterized in that the substrate has been processed prior to final user printing to yield a steganographic digital watermark pattern thereon that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered; wherein the substrate has been processed with ink to form the steganographic digital watermark pattern thereon, and the ink forms a mesh of thin lines.

6. (Original) The substrate of claim 5 in which the mesh of thin lines comprise a single pattern that is tiled across the substrate, the pattern being arranged so that lines located at adjoining tile edges meet without discontinuity.

7. (Previously Presented) A substrate to which final user printing can be later applied to yield a final printed object, characterized in that the substrate has been processed prior to final user printing to yield a steganographic digital watermark pattern thereon that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered; wherein the substrate has been processed with ink to form the steganographic digital watermark pattern thereon, and the ink serves to impart a colored tint to the substrate.

8. (Original) The substrate of claim 1 in which the substrate has been textured to form the steganographic digital watermark pattern thereon.

9-11. (Canceled)

12. (Original) The substrate of claim 1 in which the digital watermark pattern extends across an entire face of the substrate.

13. (Original) The substrate of claim 1 in which the digital watermark pattern is restricted to certain areas of said substrate.

14. (Original) The substrate of claim 1 in which the substrate has first and second sides, and only the first side has a watermark pattern.

15. (Canceled)

16. (Original) The substrate of claim 1 in which the digital watermark pattern is manifested in a laminate layer.

17-19. (Canceled)

20. (Original) The substrate of claim 1 in which the watermark pattern conveys a steganographic orientation signal.

21. (Previously Presented) The substrate of claim 1 in which the multi-bit binary data comprise serialization information, permitting the printed object to be uniquely identified from other, seemingly identical, printed objects.

22-23. (Canceled)

24. (Previously Presented) A substrate to which final user printing can be later applied to yield a final printed object, characterized in that the substrate has been processed prior to final user printing to yield a steganographic digital watermark pattern thereon that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered; wherein the plural bits of digital information can be decoded from said substrate only by a user having secret knowledge, wherein a first end user cannot decode information encoded on a substrate of a second end user, and vice versa.

25-26. (Canceled)

27. (Original) The substrate of claim 1 comprising printing stock for a security document such as a banknote.

28-29. (Canceled)

30. (Original) A method of processing a blank substrate prior to final printing by an end-user, the method comprising forming a steganographic digital watermark pattern on the substrate that does not impair subsequent use of the substrate, yet encodes multi-bit binary data, the presence of said multi-bit binary data not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the multi-bit binary data can be recovered.

31. (Original) The method of claim 30 that includes forming said pattern by applying ink to the substrate.

32. (Original) The method of claim 31 that includes forming said pattern by ink-jet printing.

33. (Original) The method of claim 30 that includes forming said pattern by texturing the substrate.

34. (Original) The method of claim 33 in which the texture is applied by force of pressure.

35. (Original) The method of claim 33 in which the texture is formed by embossing.

36. (Original) The method of claim 33 in which the texture is formed by an intaglio plate.

37 - 38. (Canceled)

39. (Original) The method of claim 30 in which the watermark pattern conveys a steganographic orientation signal.

40. (Previously Presented) A method of processing a blank substrate prior to final printing by an end-user, the method comprising forming a steganographic digital watermark pattern on the substrate that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered, wherein:

the substrate has a photographic emulsion thereon;

the pattern is formed by exposing the emulsion with a noise-like pattern; and

the pattern is detectable after developing of the substrate.

41. (Original) The method of claim 30 in which the pattern is formed on the substrate after delivery of the substrate to the end-user, rather than previously – as by a producer or supplier of said substrate.

42. (Previously Presented) The method of claim 30 in which the pattern is formed on the substrate prior to delivery of the substrate to the end user – as by a producer or supplier of said substrate, rather than after.

43. (Previously Presented) A method of processing a blank substrate prior to final printing by an end-user, the method comprising forming a steganographic digital watermark pattern on the substrate that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered; wherein the pattern is defined by generating a tile specifying one of N luminance values for each of plural different areas, consolidating the N values down to M, where M is less than N, and then forming lines between said areas in response to said consolidated luminance values.

44. (Original) The method of claim 43 that further includes allowing a user to specify line criteria, including whether the lines are straight or curved, and if curved, the criteria therefore.

45. (Original) The method of claim 30 in which the pattern is formed of ink, and the ink is chosen to optimize watermark detection in the presence of expected illumination spectra.

46. (Canceled)

47. (Previously Presented) A method of processing a blank substrate prior to final printing by an end-user, the method comprising forming a steganographic digital watermark pattern on the substrate that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered; wherein the plural bits of digital information can be decoded from said substrate only by a user having secret knowledge, wherein a first end user cannot decode information encoded on a substrate of a second end user, and vice versa.

48. (Original) A blank substrate produced according to the method of claim 30.

49. (Previously Presented) The substrate of claim 1 wherein said multi-bit binary data correspond to said pattern in accordance with an algorithmic transformation.

50. (Previously Presented) The method of claim 30 wherein said multi-bit binary data correspond to said pattern in accordance with an algorithmic transformation.